Windows NT Server 4.0 Editions

If you're familiar with the editions of Windows NT Server 4.0, selecting the appropriate edition of Windows Server 2003 might be easier with a quick review of the 4.0 editions and a comparison to their Server 2003 counterparts.

Windows NT Server 4.0's basic edition is simply called Windows NT Server 4.0. It supports a maximum of four processors per computer, a maximum of 4GB of physical RAM per computer, and a maximum of about 4TB (terabytes; 1 terabyte is equal to 1,000 gigabytes) of disk space. The basic edition provides a 50/50 split of server memory, reserving 2GB of RAM for the operating system and 2GB for applications. Windows Server 2003, Standard Edition roughly corresponds to NT 4.0's basic edition because it has the same basic memory, processor, and disk space limitations.

Windows NT Server 4.0 Enterprise Edition introduced Windows Clustering. Actually, it introduced two types of clustering: the Windows Load Balancing Service (WLBS) and true Windows Clustering, which had been code-named Wolfpack. In WLBS, multiple servers hosting the same content distribute incoming user requests across themselves. The most common WLBS scenario is Web farms, in which many different identical Web servers handle incoming requests from Internet users. True Windows Clustering uses the Windows Cluster Service and allows two servers to provide failover and redundancy for one another. The clustered servers, called *nodes*, don't balance their workloads between themselves. Instead, each node does its own independent work. If one node fails then the other node picks up and does its own work along with the work from the failed node. Enterprise Edition also introduced the Addressing Windows Extensions (AWE), which enables Windows to reserve only 1GB of the system RAM for itself, leaving 3GB free for applications. Applications such as Microsoft SQL Server take advantage of the additional RAM and offer better performance.

Windows Server 2003, Enterprise Edition corresponds to Windows NT Server 4.0 Enterprise Edition, providing the same clustering capabilities and memory support. In Windows Server 2003, WLBS is renamed Network Load Balancing (NLB). And, unlike Windows NT, NLB is included in all editions of Windows Server 2003, not just Enterprise Server.

Windows NT Server 4.0 Enterprise Edition also introduced a number of advanced features, such as the Microsoft Message Queue Server (MSMQ), which is present as Message Queuing Services in all editions of Windows Server 2003.

Windows Server 2003, Datacenter Edition is an extension of Windows Server 2003, Enterprise Edition, and there's no directly corresponding version of Windows NT. Similarly, Windows Server 2003, Web Edition is a special-purpose version of Windows Server 2003 and doesn't correspond with a specific edition of Windows NT. Windows NT Server 4.0 Terminal Server Edition doesn't correspond to any version of Windows Server 2003 because all editions of Windows Server 2003 include Terminal Services capabilities.

If you're performing an upgrade from Windows NT 4.0 to Windows Server 2003, you'll need to upgrade with a corresponding edition of the operating system:

- Upgrade Windows NT Server 4.0 computers by using Windows Server 2003, Standard Edition.
- Use Windows Server 2003, Enterprise Edition to upgrade Windows NT Server 4.0 Enterprise Edition.
- Windows NT Server 4.0 Terminal Server Edition can be upgraded by using either Windows Server 2003, Standard Edition or Enterprise Edition; Standard Edition is the most common choice.

Note that Microsoft doesn't provide an upgrade path from any NT operating system to Windows Server 2003, Datacenter Edition; almost by definition, any hardware running NT 4.0 won't be compatible with Datacenter Edition.

Windows 2000 Server Editions

Windows 2000 Server editions correspond more precisely to specific Windows Server 2003 editions because Microsoft didn't really change its operating system product positioning between the release of Windows 2000 Server and Windows Server 2003.

Windows 2000 Server itself, of course, provides improvements over Windows NT Server 4.0. The basic edition of Windows 2000 Server is the closest match to Windows NT Server 4.0, adding Terminal Services to the list of major product features in the edition. Windows Server 2003, Standard Edition matches Windows 2000 Server feature for feature. One major change between the two is in Terminal Services. An optional component in Windows 2000, Terminal Services is present in all editions of Windows Server 2003 in at least a Remote Administration mode.

> ➤ To learn about Windows Server 2003's Terminal Services capabilities and operational modes, **see** Chapter 11, "Terminal Services," **p. 179**.

Windows 2000 Advanced Server adds up to eight-way processor support over Windows NT Server 4.0 Enterprise Edition, and that eight-way support is continued in Windows Server 2003, Enterprise Edition. Windows 2000 Advanced Server is the lowest edition of Windows 2000 Server that includes NLB; as we've already mentioned, all editions of Windows Server 2003 include NLB. Other advanced Windows NT Server 4.0 Enterprise Edition features, such as MSMQ, are present in all editions of both Windows 2000 Server and Windows Server 2003.

Windows 2000 Datacenter Server was the first "Datacenter" edition of Windows. It adds support for up to 64MB of RAM, four-way Windows clustering (over Advanced Server's two-way clustering), larger disk volumes, and up to 32-way multiprocessing support, using proprietary

Hardware Abstraction Layer (HAL) add-ins from computer manufacturers. Windows Server 2003, Datacenter Edition introduces almost no changes to that list of basic features and must still be acquired directly from an approved computer manufacturer in conjunction with a server approved to run Datacenter Server.

Windows Server 2003, Web Edition has no direct Windows 2000 Server edition to compare to because Web Server is a new edition. However, nearly all Windows 2000 Server computers being used as Web servers can be reconfigured to use Windows Server 2003, Web Edition for lower licensing costs and an operating system tuned specifically for use as a Web server.

Speaking of upgrades, selecting the right edition for a Windows 2000 Server upgrade is easy: Just pick the corresponding Windows Server 2003 edition. With a one-to-one mapping from Windows 2000 Server to Windows Server 2003, you'll be able to easily select the correct edition. Note that Windows Server 2003, Web Edition can be used to upgrade Windows 2000 Server computers as well, offering a less-expensive upgrade path for Web server computers.

Web Server: New Kid on the Block

Of course, Windows Server 2003, Web Edition can throw a bit of a wrench into your upgrade plans. Although it's an obvious choice for Windows NT and Windows 2000 computers currently being used as Web servers, Windows Server 2003, Web Edition's limited functionality can affect your decision. For example, if you have an internal Web server that hosts your company intranet and also serves as a domain controller, you can't use Windows Server 2003, Web Edition because it can't be a domain controller. You might have Web servers that also act as VPN gateways, which Windows Server 2003, Web Edition doesn't support. Windows Server 2003, Web Edition also lacks support for Windows Media Services and has limited support for features like public key infrastructure. You'll need to carefully evaluate how your NT or 2000 Web servers are being used before deciding which edition of Windows Server to use for an upgrade.